

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 19 APR 2005

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Applicant's or agent's file reference OPP031338KR	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/KR2003/002815</b>	International filing date (day/month/year) <b>23 DECEMBER 2003 (23.12.2003)</b>	Priority date (day/month/year) 23 DECEMBER 2002 (23.12.2002)
International Patent Classification (IPC) or national classification and IPC  <b>IPC7 C21B 13/00</b>		
Applicant  <b>POSCO et al</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>22 JULY 2004 (22.07.2004)</b>	Date of completion of this report  <b>31 MARCH 2005 (31.03.2005)</b>
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  <b>CHUNG, Sang Yong</b>  Telephone No. 82-42-481-5524 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/002815

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

- These elements were available or furnished to this Authority in the following language English which is
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION

International application No.

PCT/KR2003/002815

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-16	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-16	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims	NONE	NO

### 2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: US 5535991 A

D2: US 5185032 A

D3: US 6277324 B1

#### 1. Claim 1

Claim 1 of the present application relates to a method for manufacturing molten iron by the steps of reducing an iron-containing mixture in a fluidized-bed reactor and then producing molten iron in a melter gasifier, characterized by containing the step of combustion by the oxygen directly supplied from the area into which a reducing gas flows when the reducing gas discharged from the melter gasifier is supplied to the melter gasifier.

D1-D3 disclose methods for producing molten iron by the steps of reducing iron in a preheating reactor and a reduction reactor and charging the reduced iron into a melter gasifier, characterized by containing the step of supplying the gas generated from the melter gasifier to a fluidized-bed reactor.

The present invention has an advantage of preventing a dispersing plate from being blocked by the chemical of ore particles which has a low melting point, by way of directly blowing oxygen to the reducing gas in the fluidized-bed reactor. Said technical feature and advantage are not obvious to a person skilled in the art. In addition, D1-D3 disclose the reduction of iron ores in a fluidized-bed reactor, but do not disclose the direct supply of oxygen in the fluidized-bed reactor to increase the temperature of the reducing gas.

Therefore, claim 1 meets the requirement of PCT Article 33(3).

(Continued on Supplemental Sheet.)

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V.

2. Claims 2-8

Since claims 2-8 are dependent claims which include the technical features of claim 1, claims 2-8 also meet the requirement of PCT Article 33(3).

3. Claims 9-16

Claim 9 relates to an apparatus for manufacturing molten iron comprising a gas burner installed in an area of the fluidized-bed reactor through which the reducing gas flows. None of the documents D1-D3 disclose such a technical feature. Therefore, claim 9 meets the requirement of PCT Article 33(3).

Since claims 10-16 are dependent claims which include the technical feature of claim 9, claims 10-16 also meet the requirement of PCT Article 33(3).